

L'Korn. K.M.

V. The Integral Coefficient of Absorption of Solar Radiation
for Some Materials and Coatings. E. V. L'Korn and G. S.
Moroz. Zhur. Tekh. Fiz. 1986, 62, 47-50, 502. (In
Russian). Apparatus and methods are described for
measuring the coefficient of absorption of the direct solar radiation
reaching the earth's surface. Typical values of α are given for
(in %): Ag 5.0, Ti 1.0, Zn 1.0, thick paint 1.0, Al 0.0, ZnO
similarly on Al 0.0, Al 100 microns 0.0, Al 100 microns
20 μ thick on Al 14.5, Cu 10 11.5, Al paint 33.0,
polished Ni plating 15.0, Al paint, fresh 37, weathered 57,
stainless steel, polished 39, matt 60, matt 64. A. F. B.

1/2 2/3 1/4

L'VOVA, YE.P.

112-1-1052

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,
Nr. 1, p. 167 (USSR)

AUTHORS: Rybalka, P.G., L'vova, Ye.P.

TITLE: Electric Arc Cutting of Pipes under Flux (Elektrodugovaya
rezka trub pod flyusom)

PERIODICAL: Sbornik: Vopr. svarki v energomashinostroyenii i
metallurgich. proiz-ve, Moscow, Mashgiz, 1955, pp.156-165.

ABSTRACT: Results of experiments in electric arc cutting under flux
with a metallic electrode of pipes with a wall thickness
up to 10 mm and with a cutting speed up to 250 m per hr
and more, are described. The experimental equipment was
assembled on the basis of a welding tractor of the YT-2000
type, the feeding of the arc was accomplished by three
welding transformers of the TC-150-8 type connected in
parallel. A wire, 5 and 6 mm in diameter, of the CB08
mark was used as electrode. Experiments in exciting the

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112-1-1052

Electric Arc Cutting of Pipes under Flux. (Cont.)

arc with various rotation speeds of the pipe and under various fluxes demonstrated that the increasing of the cutting speed within the investigated range, the composition of the flux and current changes within limits from 800 to 2500 amperes do not influence the dependability of exciting the arc by using an oscillator. The cutting speed and the stability of the process with a stable current can be raised at the expense of reducing the granulation of the flux. The use of flux-slag does not impair the stability of the process, nor the quality of the cut. Requirements from the electrode wire consist in securing a clean surface, giving a good electric contact, while the chemical composition of the wire does not have any substantial meaning. Experiments in cutting pipes with unshielded arc demonstrated the instability of the process; at the same time, the power of the arc, as compared with cutting under the

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112-1-1052

Electric Arc Cutting of Pipes under Flux. (Cont).

flux, increases by 20 to 25 per cent while much gas and smoke is given off. Experiments in cutting pipes with a carbon arc also did not give any positive results. The results of experiments with electric-arc cutting under flux shielding were checked up on an industrial machine tool "650" in producing pipes with a spiral seam, with full automation of the operation.

B.S.B.

Card 3/3

L'VOVA, Ye.P., inzhener.

Welding austenite chromium nickel steels and alloys; review of
foreign journals. Svar.proizv. no.11:27-31 N '55. (MLRA 9:1)

1.TSentral'nyy nauchno-issledovatel'skiy institut mashinostroyeniya
i metallobrabotki.
(Chromium-nickel steel--Welding) (Steel alloys--Welding)

LYUBAVSKIY, K.V., prof., doktor tekhn. nauk; L'VOVA, Ye.P., inzh.

Eighth international congress on welding in Czechoslovakia. Svar.
preizv. no. 2:44-45 P '59. (MIRA 12:1)
(Czechoslovakia--Welding--Congresses)

LVOVA, E.; LUBAVSKII, K.

Non-oxydizing ceramic flux for arc welding. p. 29.

ZVARACSKY SBORNIK. (Slovenska akademie vied) Bratislava, Czechoslovakia. Vol. 8, no. 1, 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, no. 10, Oct. 1959. Uncl.

L'VOVA, Ye. P.

SOV-135-58-10-1/19

AUTHORS: Lyubavskiy, K.V., Doctor of Technical Sciences, Professor,
and L'vova, Ye. P., Engineer

TITLE: New Fluxes for Arc Welding (Novyye flyusy dlya dugovoy svar-
ki)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 10, pp 1-5 (USSR)

ABSTRACT: Information is presented on experimental studies carried
out at TsNIITMASH which resulted in the development of new
ceramic, non-oxidizing "FTsK" fluxes having considerable
technological advantages over the usual ceramic fluxes as
e.g. easy separation of the slag crust from the surface.
The new fluxes are suitable for welding high-alloy steels,
including corrosion- and heat-resistant steels and alloys.
It is expected that, if the raw material is sufficiently
pure, these fluxes could be used for welding titanium and
its alloys.

ASSOCIATION: TsNIITMASH

1. Welding fluxes--Development 2. Welding fluxes--Applications

Card 1/1

S/135/60/000/007/001/014
A006/A002

AUTHORS: Lyubavskiy, K.V., Professor, Doctor of Technical Sciences, L'vova,
Ye.P., Engineer

TITLE: Automatic Welding of "1X18H9T" (1Kh18N9T) Steels Under Ceramic
"Ф4К" (FTsK) Fluxes

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 7, pp. 1-5

TEXT: Information is given on the investigation of automatic welding of 1Kh18N9T steel under ceramic FTsK fluxes, including a calculation method to determine the amount of alloying admixtures in the flux ensuring the required ferrite amount in the weld metal. A simplified equation is given to calculate the concentration of the alloying component in multilayer weld joints as a function of the base metal, the electrode wire and the metal admixture of the flux. The coefficient of transition of various components was determined for a series of fluxes with different admixtures of chromium, nickel, and ferroalloys of manganese, molybdenum, titanium and niobium. The fluxes of each series were prepared in two variants: i.e. by mixing in water and sintering at 750°C (FTsK fluxes); and by mixing in water glass of 1.22 density and roasting at 400°C (FTsK-S fluxes). The granulation of the fluxes was 1-2 mm. 1Kh18N9T steel plates were welded under flux with an

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S/135/60/000/007/001/014
A006/A002

Automatic Welding of "1X18H9T" (1Kh18N9T) Steels Under Ceramic " $\Phi 4K$ " (FT3K) Fluxes

electrode rod of the same composition and 4 mm in diameter. The welding conditions were: 400-450 amps d.c. of reverse polarity; 30-32 v arc voltage; 35 m/hour welding speed. The arc was fed from a "CГ-1000" (SG-1000) generator. The experimental data were used to calculate the amount of alloying admixtures of the flux. Calculations based on a structural diagram given by Schaeffler (Ref. 5) show that for welding 1Kh18N9T steel with an electrode wire of the same material, it is sufficient to have a set of two fluxes, one of them containing chrome metal or ferro-silicon and one without these admixtures. The use of such fluxes makes it possible to combine the base metal and the electrode in such a manner that weld metals with a two-phase structure and the required ferrite content are obtained. Data given in Table 4, obtained by special experiments, show that weld joints resistant to crystallite corrosion may be produced by slight additional alloying of the welding pool with titanium through the flux. Recommendations are given (Table 5) for automatic butt welding of 2-2¹/₄ mm thick 1Kh18N9T steel. Experimental tests show that weld joints with satisfactory mechanical properties and resistance against crystallite corrosion may be obtained by the recommended technology. There are 6 tables, 2 figures and 6 references: 4 Soviet and 2 English.

Card 2/2

L'VOVA, Ye.P., inzh.; LYUBAVSKIY, K.V., doktor tekhn.nauk, prof.

Electric arc welding of EI725 (Kh15N35B5T) deeply austenitized
steel. [Trudy] TSNIITMASH 104:69-80 '62. (MIRA 15:6)
(Steel, Heat-resistant--Welding)

L'VOVA, Ye.P., inzh.

Welding EP126 highly austenitic steel. Svar. proizv. no.8:2-5
(MIRA 17:1)
Ag '63.

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii
i mashinostroyeniya.

ACC NR: AP6018012

(N)

SOURCE CODE: UR/0413/66/000/010/0126/0126

INVENTORS: Lyubavskiy, K. V.; L'vova, Ye. P.; Sukhov, L. V.; Yarovinskiy, L. M.; Tarnovskiy, A. I.; Ryabchenkov, A. V.; Gerasimov, V. I.; Iodkovskiy, S. A.

ORG: none

TITLE: Welding electrode. Class 49, No. 181968 [announced by Scientific Research Institute of Technology and Machine Construction (Nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 10, 1966, 126

TOPIC TAGS: welding, welding electrode, austenite steel, carbon, silicon, manganese, chromium, nickel, molybdenum, niobium, sulfur, phosphorus

ABSTRACT: This Author Certificate presents a welding electrode for welding austenite steels containing carbon, silicon, manganese, chromium, nickel, molybdenum, niobium, sulfur, and phosphorus. To increase the resistance of welded seam to corrosion, the electrode composition is taken in the following percent relationship: carbon—not over 0.05; silicon—not over 0.45; manganese 2—10; chromium 19—25; nickel 33—50; niobium 0.8—1.2; molybdenum 2.5—7.5; sulfur or phosphorus—not over 0.02 of each.

SUB CODE: 13/ SUBM DATE: 29Apr65

Card 1/1

UDC: 621.791.042.2

L'VOVA, Ye.V.

Recent changes in the natural conditions of the southern Ukraine.
Izv. AN SSSR Ser. geog. no.1:54-61 Ja-F '65.

(MIRA 18:2)

1. Institut mineral'nykh resursov Gosudarstvennogo geologicheskogo
komiteta SSSR.

L'YOVA, Ye. V., Cand Geol-Min Sci--(diss) "Quaternary deposits of the northern part of the Crimean steppe." Kiev, 1952. 15 pp (Kiev State U in V.G. Shevchenko), 100 copies (PL, 82-56, 104)

-45-

L'VOVA, Ye.V. [L'vova, IE.V.]

Geomorphology and neotectonics of Crimean steppes. Geog.
zbir. no.4:97-112 '61. (MIRA 14:8)
(Crimea—Geology, Structural)

L'vova, Ye. Yu.

AUTHORS Kalashnikov, S.G., L'vova, Ye. Yu., Ostroborodova, V.V., 57-9-1/40
 TITLE The Electrical Properties of Germanium with an Admixture of Zinc.
 (Elektricheskiye svoystva germaniya s primes'yu tsinka. Russian)
 PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 9, pp 1925-1930 (U.S.S.R.)
 ABSTRACT The influence exercised by zinc admixtures upon Hall's mobility of
 holes, the drift mobility of electrons, and on the recombination ve-
 locity of non-balanced electrons in germanium is investigated. A
 comparison of the results obtained for Hall's mobility of holes and
 the analogous data for once charged centers shows that the amount
 of mobility is about proportional to the square of the charge of
 dispersing centers. It is stated that the alloy of germanium and
 zinc causes no effective recombination centers, for which reason
 zinc is a good alloying element for the production of hole-germanium
 with low resistance but with a long life of the electrons. It is
 shown that the upper limit of the cross section for zinc-atom-re-
 combination in electrons does not exceed 10^{-19} cm².
 There are 3 figures, 1 table, and four Slavic references.
 ASSOCIATION Moscow State University.
 (Moskovskiy gosudarstvennyy universitet.)
 SUBMITTED April 8, 1957
 AVAILABLE Library of Congress.
 Card 1/1

24.3100
24.3500

42194
S/051/62/013/004/009/023
E039/E491

AUTHORS: Georgobiani, A.N., L'vova, Ye.Yu., Fok, M.V.

TITLE: Absorption of energy in electroluminescence

PERIODICAL: Optika i spektroskopiya, v.13, no.4, 1962, 564-568

TEXT: Measurements are made of the energy absorbed from the electric field applied to an electroluminescent condenser when a sinusoidal exciting voltage is used. These measurements are of importance in the study of processes occurring in luminescent materials and are of practical value in determining the usefulness of luminescent materials as light sources. The current waveform produced by the applied sinusoidal voltage is markedly non-sinusoidal. Instantaneous and average values of the power absorbed are obtained by means of a galvanometer oscillograph method and the average values are compared with values obtained by means of bridge measurements. The accuracy of relative power measurements using the oscillograph is 5% and for absolute values 12%. The minimum value of power measured is 0.008 mW for 50 V applied and the maximum is 100 mW for 1000 V applied. The power waveform is also nonsinusoidal and the nonlinearity increases with Card 1/2

Absorption of energy ...

S/051/62/013/004/009/023
E039/E491

increasing voltage. The ZnS-Cu,Al as well as the ZnS-Cu from two other sources used all contained chlorine and were in layers 0.03 to 0.04 mm thick. Measurements were made at room temperature using a 50 cycle voltage supply. A $\Phi \ni \vee$ 19 (FEU 19) photomultiplier calibrated against a thermopile was used for measuring luminescent energy yields giving a relative accuracy of 6% and an absolute accuracy of 30%. As the voltage is increased, the electroluminescence yield passes through a maximum $\sim 1\%$ of the absorbed power for voltages of 200 to 275 V, comparable for all the phosphors. The bridge method gives a value of the yield some 25% lower than that determined by the oscillograph method. Maximum light efficiencies are 8 to 9 lumens/watt. The results are compared with theory and good agreement obtained. There are 4 figures. ✓

SUBMITTED: July 21, 1961

Card 2/2

L'VOVA, Ye.Yu.

Effect of cadmium on the probability of electron recombination in germanium. Fiz. tver. tela 5 no.11:3057-3059 N '63.

(MIRA 16:12)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR, Moskva.

S/051/63/014/004/021/026
E039/E420

AUTHOR: L'vova, Ye. Yu.

TITLE: The kinetics of CdS luminescence

PERIODICAL: Optika i spektroskopiya, v.14, no.4, 1963, 573-575

TEXT: The experimental results obtained in earlier works (Y.T.Sihvonen, D.R.Boyd, C.D.Woelke, Phys. Rev., v.113, 1959, 965; A.A.Vuylsteke, V.T.Sihvonen, Phys. Rev., v.113, 1959, 40) are compared with theory. Two types of CdS are examined. 1) Pure CdS which has a low dark conductivity and a charge carrier lifetime of about 1μ sec. When excited at room temperature with the 365 m μ line only green luminescence is observed with a maximum at 5145 Å. 2) A CdS sample emitting a narrow green band with a maximum at 5240 Å and a wide red band with a maximum near 7200 Å. It is assumed that the probability of secondary trapping is larger than the probability of recombination both for electrons and holes, $\delta_1 \gg \beta n$ and $\delta \gg \beta_1 n$. The theoretical dependence of the equilibrium intensity of luminescence I on the intensity of exciting light E is plotted for a number of values of parameters μ and Ω . μ depends only on the characteristics of the centers of luminescence. If $\mu' < 1$ the concentration of holes exceeds

Card 1/2

The kinetics of CdS luminescence

S/051/63/014/004/021/026
E039/E420

equilibrium and for $\mu'' > 1$ the reverse. Agreement is obtained with the experimental values for the red band when $\Omega = 10^6$ and $\mu'' = 10^3$ and for the green when $\mu' = 10^{-3}$. From this investigation it follows that recombination producing radiation and photoconductivity depend on charges of different sign. It is assumed that radiation is derived from recombination of free electrons with ionized centers of luminescence and photoconductivity depends on holes. However, it is possible that radiation depends on recombination of free holes and photoconductivity on electrons. There are 2 figures.

SUBMITTED: June 16, 1962

Card 2/2

L 13102-63

EWT(1)/EOS .AFFTC/ASD/SSD

ACCESSION NR: AP3003416

S/0051/63/015/001/0095/0099

AUTHOR: Georgobiani, A.N.; L'vova, Ye. Yu.; Fok, M. V.

TITLE: Temperature dependence of the electroluminescence yield

53

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 95-99

TOPIC TAGS: electroluminescence, ZnS-Cu-Al phosphor

ABSTRACT: Earlier the authors (Optika i spektroskopiya, 13, 564, 1962 and Ibid., 9, 775, 1960) investigated the voltage dependence of the electroluminescence yield of ZnS:Cu:Al phosphor filled capacitors. In the present work, using the same experimental technique (described in the first reference) they investigated the temperature dependence and the voltage dependences at different temperatures of the electroluminescence of the same phosphors. The phonon mechanism is considered. Curves for the energy absorbed by the phosphor-filled capacitor as a function of the voltage for $T = 114^{\circ}\text{K}$ and 400°K are given; as are plots of the electroluminescence yield versus voltage at 114, 294 and 399°K , and absorbed energy, electroluminescence brightness and yield as a function of the temperature (see Enclosure 1). The authors arrive at the following empirical formula for the brightness:

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L 13102-63

ACCESSION NR: AP3003416

$$B(T) = B_0(T) e^{-\frac{b_1(T)}{\sqrt{T}}}$$

where T is the temperature, V is the voltage and b_1 is a coefficient. The general conclusion is that the electroluminescent cell is a rather complicated electric system and that consequently a more precise model is necessary to obtain better agreement between theory and experiment. Orig.art.has: 8 formulas, 1 table and 4 figures.

ASSOCIATION: none

SUBMITTED: 26Jul62

DATE ACQ: 30Jul63

ENCL: 01

SUB CODE: PH

NO REF SOV: 006

OTHER: 000

Card 2/2

L 17780-63

EWI(1)/BDS

AFFTC/ASD/ESD-3/IJP(0)/SSD

ACCESSION NR: AP3005852

S/0051/63/015/002/0266/0268

AUTHOR: Georgobiani, A.N.; L'vova, Ye.Yu.; Fok, M.V. 58

TITLE: Relation between the phases of the current, power absorbed and brightness in electroluminescence 71

SOURCE: Optika i spektroskopiya, v.15, no.2, 1963, 266-268

TOPIC TAGS: electroluminescence, brightness wave., luminescent capacitor

ABSTRACT: The authors investigated the same electroluminescent capacitors as earlier (A.N.Georgobiani and M.V.Fok, Opt. i spektro., 9, 775, 1960) using a circuit with and without a compensating capacitance. The luminescence was excited by a 50 cps sinusoidal voltage V at room temperature. A loop oscillograph was used to record the instantaneous values of V, the current I, the power W absorbed by the capacitor, and the brightness B of the emitted electroluminescence. A typical group of oscillograms is shown in the Enclosure. Analysis of the oscillograms recorded under different conditions (mainly changes in compensating capacitance altering the phase difference between the voltage and current) indicates that the relation between the phases or instants of the crest values of V, I, W and B can be explained

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L 17780-63

ACCESSION NR: AP3005852

satisfactorily with the aid of the concepts regarding the kinetics of electroluminescence proposed in earlier papers by the authors (above reference, A.N.Georgobiani and M.V.Fok. Optk i spektro.,11, 93, 1961, and A.N.Georgobiani, Ye.Yu.L'vova and M.V.Fok, Ibid.,13, 564, 1962): electrons are released primarily in the regions of maximum field, which are located in the immediate proximity of the electrodes; electroluminescence appears when these electrons arrive in the region of high concentration of ionized centers. In line with these concepts the brightness must attain its peak value before the current does, which is borne out by the experimental curves. Orig.art.has: 3 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 19JUn63

DATEACQ: 06Sep63

ENCL: 01

SUB CODE: PH

NO REF SOV: 003

OTHER: COO

Card 2/3

AZROVA, TS.S.; ARKHIPOV, A.P.; VINOGRADOV, A.V.; GRABOVSKIY, I.V.;
GRISHINA, R.I.; DMITRIYEV, P.D.; DUBINSKIY, Ye.L.; ZABRODIN,
B.V.; KOLOTIY, M.V.; KRASNOV, B.S.; KURDYUKOVA, N.V.; L'VOVA,
Yu.M.; OBUKHOVA, A.V.; FOMIN, V.G.; MEDVEDEVA, M.A., *tekhn.*

~~Red:~~

[Album of drawings of TE3, TE7, TE2, TE1, TEM1, and TU2
diesel locomotives; electric apparatus] Al'bom chertezhei
teplovozov TE3, TE7, TE2, TE1, TEM1 i TU2; elektricheskie
apparaty. Moskva, Transzheldorizdat. Vol.2. 1963. 394p
(MIRA 16:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye lokomotivnogo
khozyaystva.

(Diesel locomotives--Electric equipment)

L'VOVA, Z. A.

L'vova, Z. A.

"The mineral nutrition of dairy cows with various types of fodder under the conditions of certain farms in Leningrad Oblast." Min Higher Education USSR. Leningrad Veterinary Inst. Leningrad, 1956. (Dissertation for the Degree of Candidate in Agricultural Sciences).

Knizhnaya letopis'
No. 21, 1956. Moscow.

L'VOVICH, A. A.

"Sensitivity of Radiotelegraph Receivers," dissertation, 1947, held at library of this institute, Radiotekhnika, No 3, 1949.

Scientific Research Institute of [Shipbuilding Engineering?] Ministry of the Navy
(NIIST VMS)

L'VOVICH, A. A.

52/49T25

USSR/Communication
Sensitivity

May/Jun 49

"Method of Calculating the Signal-to-Noise Ratio and
the Sensitivity of Radiotelegraph Receiving Units,"
A. A. L'vovich, Cand Tech Sci, 11 pp

"Radiotekh" Vol IV, No 3-pp-57-68

Presents method for theoretical calculation of signal-
to-noise ratio and absolute sensitivity of radiotele-
graph receivers. Introduces calculated values for
signal-to-noise ratios of automatic code-recording
receivers. Submitted 14 Feb 49.

52/49T25

L'VOVICH, A. A.,

A. S. L'vovich, in a paper, "Devices for Distribution and Power Supply of Electric High and Low-Frequency Oscillations" the author considered the fundamentals of classification and the fields using such devices. He introduced formulas for calculating multipole decoupling devices.

Presented at the Eleventh Scientific and Technical Session of the Leningrad Section VTURiE (Scientific and Technical Society for Radio and Electricity) imeni A. S. Popov, dedicated the celebration of Radio Day, Leningrad, 16-24 Apr 56.

(Radiotekhnika, No. 7, 1956)

AID P - 4552

Subject : USSR/Electronics

Card 1/2 Pub. 90 - 6/11

Author : L'vovich, A. A.

Title : New bridged-T circuits for h.f. electric power-adding and distributing.

Periodical : Radiotekhnika, 4, 36-43, Ap 1956

Abstract : The author presents the principles of operation of bridged-T (hybrid) circuits providing for power adding of two h.f. oscillators. In 1954 the author and Prof. Z. I. Model' submitted designs of arrangements for power-adding of any number of h.f. oscillators. These schemes can be used in large radio broadcasting stations as well as in many other electric installations for h.f. and v.h.f. The arrangement has a high efficiency. Two variants are presented: a) a star-connected circuit and b) a polygonal circuit. Seven diagrams, 2 Soviet references (1954-1955).

AID P - 4552

Radiotekhnika, 4, 36-43, Ap 1956

Card 2/2 Pub. 90 - 6/11

Institution : None

Submitted : N 5, 1955

L'VOVICH, A.A.

Device for distributing and combining potentials of high and
low frequency electric oscillations. Electrosviaz' 10 no.12:3-14
D '56. (MLRA 9:12)

(Radio--Apparatus and supplies)

108-13-8-9/12

AUTHOR: L'vovich, A. A., Member of the Society

TITLE: On the Method of the Calculation of the Parameter Variations of Non-Linear Multipoles (O metode raschëta variatsiy parametrov nelineynykh mnogopolyusnikov)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 8, pp. 54-62 (USSR)

ABSTRACT: Two generalized formulae are derived. They permit to determine the connection between the parameter variations of non-linear multipoles and the changes of the control potentials (or currents) applied to these multipoles. Non-linear multipoles with an arbitrary number of non-linear elements (resistances) are investigated. The method of representing a small increase of a physical magnitude by the logarithmic slope (at the working point) $L(Y)$, offers (in its use in the cases mentioned) a number^x of conveniences : 1) The quantities $L_Y(Y)$ are dimensionless. Thus the analysis can be carried out in an especially generalized form. 2) By means of this parameter the degree of the non-linearity (slope) of the function $Y = f(X)$ at the working point $X = X_0$ can be given directly. For reasons of simplicity the author investigates the case

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108-13-8-9/12

On the Method of the Calculation of the Parameter Variations of Non-Linear Multipoles

where the values of the non-linear resistances are determined by the effective components of the currents passing them. Formula (11) for the wanted relative modification of an arbitrary multipole parameter is derived. This formula only holds in circuits with non-linear resistances which are controlled by the effective components of the passing currents. The formula (11) can also be extended to multipoles with non-linear resistances of an arbitrary type when it has the form of equation (13). The case most important for practical work, where the number of non-linear resistances and of main spectral current components does not exceed 2 is investigated. 1) A scheme with non-linear resistances and normal operating currents of a frequency. 2) Scheme with a non-linear resistance, and control currents of two different frequencies.

Enclosed is an example for the use of the given formulae, viz. the derivation of the formula for the determination of the amplitude stabilization factor of the initial voltage in the case of a self-excited quartz oscillator connected as a bridge circuit. There are 1 figure and 7 references,

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On the Method of the Calculation of the Parameter Variations of Non-Linear
Multipoles

108-13-8-9/12

which are Soviet.

SUBMITTED: December 6, 1956

1. Electric circuits--Analysis
2. Electrical engineering
3. Mathematics

Card 3/3

AUTHOR: L'vovich, A.A. SOV/106-59-2-4/11

TITLE: Stable-amplitude Synchronised Oscillators with Thermo-resistors (Amplitudno-stabil'nyye sinkhronizirovannyye generatory s termosoprotivleniyami)

PERIODICAL: Elektrosvyaz', 1959, Nr 2, pp 24 - 32 (USSR)

ABSTRACT: The article examines the steady-state operation of voice-frequency and high-frequency synchronised oscillators, amplitude-stabilised by feedback circuits containing temperature-sensitive resistors. The general scheme is shown in Figure 1. The amplitude-stabilising, 4-terminal passive network (β), containing a thermo-sensitive resistance and a stable constant resistance, is connected between the output and the input of a valve amplifier (α). Figure 2 shows a circuit of a high-frequency synchronised oscillator with a two-stage valve amplifier and a differential-type of feedback circuit. Thermo-sensitive, conductor-type resistors are connected into the positive feedback circuit and semiconductor, thermo-sensitive resistors having a negative temperature coefficient are connected into the negative feedback loop. This ensures that the positive feedback preponderates at the instant

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SOV/106-59-2-4/11

Stable-amplitude Synchronised Oscillators with Thermo-resistors

the oscillator is connected. As the thermo-sensitive resistors are warmed by the oscillatory currents the preponderance of the positive feedback diminishes and a steady-state, constant oscillation is established. With no synchronising voltage (U_c) the oscillator works at a frequency f_0 . With a synchronising voltage of frequency f_c , two modes of operation are possible: a beat regime and a synchronised regime. If correctly designed, the amplifier system is linear and, in practical cases, the phase change in the feedback can be neglected. Assuming these conditions, the author finds the condition for transfer from a beat regime to a synchronised regime. Formulae for the synchronisation bandwidth for an oscillator having (a) a single resonant circuit and (b) two resonant circuits are obtained. The voltage transfer coefficient of the feedback loop and the phase change between the output and synchronising voltages are also obtained. Variation of the output-voltage amplitude within the synchronisation band is investigated. It is concluded that to ensure simultaneously high stability

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SOV/106-59-2-4/11

Stable-amplitude Synchronised Oscillators with Thermo-resistors

of amplitude and a wide synchronisation band necessitates a balance between conflicting factors, e.g. increase of stabilisation bandwidth leads to worsening of the amplitude stability, improvement of the Q-factor (and hence increase in amplifier gain) reduces the synchronisation bandwidth and so on. Choice of the oscillator parameters is also conditioned by the necessity to avoid parasitic oscillation. The following recommendations are advised:

1) The amplifier gain must be large (not less than 150 - 200). 2) The number of stages, tuned circuits and other phase-shifting elements should be reduced to a minimum. 3) To improve the amplitude stability and to reduce the effects of noise, the stability of the tuned circuits must be high. 4) The time constants of the tuned circuits should differ by 5 to 10 times in value. The nominally-balanced, differential-type, circuit of Figure 7 is considered most suitable. There are 7 figures, 3 tables and 6 references, 1 of which is English and 5 Soviet.

SUBMITTED: June 30, 1958
Card 3/3

AUTHOR: L'vovich, A.A.

SOV/106-59-5-2/13

TITLE: Transients and Self-Modulation in Oscillators
Amplitude-Stabilised by Thermo-Sensitive Impedances
(Perekhodnyye protsessy i avtomodulyatsiya v
amplitudno-stabil'nykh generatorakh s termosoprotivlen-
iyami)

PERIODICAL: Elektrosvyaz', 1959, Nr 5, pp 13-24 (USSR)

ABSTRACT: Because the stability criteria of high-stability
oscillators depend on the transient processes which
occur in the oscillators, it is necessary to study the
transients to enable optimum values of the circuit
parameters to be chosen. The author examines oscillators
and synchronised oscillators having thermo-sensitive
elements (TSE) connected in differential and bridge
feedback circuits. The transients are analysed to:
1) determine the duration and form of transients
produced at the oscillator output after a step change
in the anode supply or in the synchronising voltage;
2) minimise self-modulation and other forms of
instability. To simplify the analysis, the TSE's are
replaced by their electrically-equivalent circuits;

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two-terminal networks having the same complex impedances relative to small increments in the current and voltage amplitudes applied to them. The author has shown in a previous work (Ref 15) that the dynamic impedance of a TSE can be expressed in a form using a "shortened" operator p . It is shown that for relatively small increments of amplitude of the high-frequency oscillations, the equivalent two-terminal network impedance can be expressed as

$$Z_m(p) = \frac{\Delta U_m}{\Delta I_m} = R_{m0} \frac{p \tau_m + 1 + \gamma}{p \tau_m + 1} \quad (3)$$

where R_{m0} is the impedance of the TSE to the high frequency current, τ_m is the TSE time constant, γ is the slope of the regulation of the impedance to the current through the TSE, p is the "shortened" operator and subscript m denotes a thermo-sensitive element.

Card 2/7 The values R_{m0} and γ are parameters of the TSE, depending

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on its working regime and are determined for a given working point by its volt-ampere characteristic (Fig 1) by

$$R_{m0} = \frac{U_{m0}}{I_{m0}}, \quad \gamma = \frac{\Delta R_m}{R_{m0}} \frac{I_{m0}}{\Delta I_m} \approx \frac{\Delta U_m}{U_{m0}} \frac{I_{m0}}{\Delta I_m} - 1$$

The value τ_m is determined by measuring the ordinate of the transient $U_m = f(t)$ for $I_m = \text{const}$ and then using the formula (Fig 2)

$$\tau_m = \frac{t}{\ln \left(\frac{U_{m1} - U_{m2}}{U_m - U_{m2}} \right)}$$

The oscillator is considered as comprising two parts: an amplifier (block μ of Fig 3) and a stabilising four-terminal feedback network (block β), which contains the TSE and Stable constant resistors. The transients are examined by determining the transfer function for

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typical, four-terminal, TSE, stabilising-networks relative to small changes in the amplitude of the oscillation envelope. The operator form of the transfer function is determined for: 1) a differential circuit with equal branches, one branch being a TSE (Fig 4a and Eq 4); 2) a bridge circuit with one TSE (Fig 4b and Eq 6); 3) a bridge circuit with two identical TSEs. (Fig 5b) 4) a π -shaped circuit with a semiconductor type of TSE (Fig 5a and Eq 7); 5) a non-loaded, differential system with a TSE and a quartz resonator (Fig 6a and Eq 8 and 9); 6) a bridge circuit with a TSE and a quartz resonator (Fig 6b and Eq 12). Then the author considers the transfer function of the amplifier part (block μ of Fig 3). Since the value and the sign of an increment in the mean slope of the valve produced by a change in the amplitude of the oscillations plays a significant part in determining the conditions under which self-modulation, aperiodic processes etc arise, the difference between the mean slope of valve in the

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steady-state condition and its dynamic slope relative to small changes in the grid voltage amplitude must be taken into account when determining the transfer function. The author gives an operational form of the transfer function (Eq 16) and a simplified form (Eq 17). The transfer functions so obtained can be used to solve various problems and, as an example, the author considers the transients at the output of a synchronised oscillator (Fig 9). An expression is obtained for:

- 1) the increment in the output voltage of a synchro-oscillator for a step change in the synchronising voltage amplitude in terms of the effective steady-state gain of the oscillator (Eq 21);
- 2) the peak value of the output voltage transient;
- 3) the equivalent time-constant of the synchro-oscillator.

The "throw" of the output voltage due to a short-duration step change of the anode voltage can be reduced by connecting an RC circuit with a large time-constant in the anode supply lead. Finally, the author considers methods for reducing self-modulation. This problem

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reduces to analysis of the roots of the characteristic
equation

$$\mu(p)\beta(p) - 1 = 0 \quad (29)$$

where $\mu(p)$ and $\beta(p)$ are the "shortened" operator
expressions of the transfer functions of blocks μ and β .
The following practical circuits are considered:

1) a circuit with one tuned stage (Fig 9); the formulae
obtained show that a synchro-oscillator is more stable
than an auto-oscillator and the stability improves with
reduction of the synchronising voltage; with linear
valve characteristics, the circuit is absolutely stable,
but this condition does not hold for two-stage circuits;
2) a single-valve circuit with a crystal resonator and a
TSE connected in a bridge circuit (Fig 11).

To reduce self-modulation, the following should be
observed: (i) the oscillator should work on the linear
part of the valve characteristics or under conditions

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where the mean slope decreases with increase of oscillator amplitude; (ii) greatest possible difference between the values of the time constants of the circuit and of the corresponding limitation of the gain of the amplifier block μ . There are 11 figures, 1 table and 15 references, 8 of which are Soviet and 7 English.

SUBMITTED: 25th July 1958

Card 7/7

L'VOVICH, A.A.

Amplitude-stabilized oscillators with automatic gain control. Radio-
tekhnika 15 no.4:54-62 Ap '60. (MIRA 13:6)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radio-
tekhniki i elektrosvyazi imeni A.S.Popova.
(Oscillators, Electric)

23612

S/108/61/000/006/008/008
D201/D305

6.4200

AUTHOR: L'vovich, A.A., Member of the Society (See Association) X

TITLE: A system for stabilizing the amplitude of high frequency voltages

PERIODICAL: Radiotekhnika, no. 6, 1961, 61 - 69

TEXT: Until recently the stabilization of amplitude of high frequency voltages used to be achieved by the use of two main systems of stabilization, synchronized generators with thermistors and oscillators or amplifiers with AGC, obtained usually by the action of rectified output voltage as applied to the control grid of tubes being controlled. In the present article the author describes a novel system of stabilization. The system enables the stabilization of amplitude of voltages up to tens of megacycles per second with an accuracy up to tenths of a percent. The bloc diagram of the arrangement is shown in Fig. 1. It consists of the following main parts: an HF or AF amplifier, transistorized or

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otherwise ("μ"), the output of which produces the stabilizing voltage U_{st} ; a rectifier, full-wave if possible, consisting of silicon or tube rectifiers ("γ"); a differentiating adjustable four terminal network (β), one arm of which contains a thermistor. One of the possible configurations of the bloc schematic is shown in Fig. 2. The resistance R_k determines the operating point of thermistor R_T , the capacitor C_1 blocks the rectified current from going through R_k . The reactance of C_1 must be small, $\frac{1}{\omega C_1} \ll \beta R_k$, where β - the transfer coefficient of the four pole β. C_1 can be made smaller by introducing a balancing condenser C_2 in the other arm of the differentiating circuit,

$$C_2 \approx \frac{1}{\omega^2 C_k R_k^2}.$$

The resistance R_n and C_F are parts of the filter for the rectified

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voltage. By considering the dynamic and static properties of the cct elements in Fig. 2, the final expressions for the amplitude stabilization factor C_{T_U} relative to the amplitude of input voltage is derived as

$$C_{T_U} = 1 - \frac{\nu}{4\beta} \frac{\frac{S_d R_{Id}}{m_p B_p} + q_p^2}{1 + \frac{\nu}{B_p} + q_p^2 + \nu q_p^2 \left(\frac{1}{4\beta} + \frac{1}{2} \right)} \quad (23)$$

and that relative to the changes in the gain μ of amplifier (C_{T_μ}) as

$$C_{T_\mu} = 1 - \frac{\nu}{4\beta} \frac{S_d R_{Id}}{m_p B_p \left(1 + \frac{\nu}{B_p} + q_p^2 + \frac{\nu}{2} q_p^2 \right)} \quad (24)$$

In the above expressions

$$\nu = \frac{dR_T}{dI_T} \frac{I_T}{R_T} ,$$

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the slope of thermistor for a given current. S_d and R_{1d} are the parameters of the diode and can be determined from the analysis of the characteristics $I_p = F(U_d, U_-)$, determined experimentally for the given diode, U_d being the alternating and U_- the d.c. voltage applied respectively. (Ref. 6: V.I. Siforov, Radiopriyemnyye ustroystva (Radio Receiving Equipment) Voenizdat, 1951); $m_p = \frac{U_p}{U_d}$; $B_p = 1 + \frac{R_n}{R_T} + \frac{R_{1d}}{R_T}$ (Fig. 3) for a half wave rectifier and $B_p = 1 + \frac{R_n}{R_T} + \frac{R_{1d}}{2R_T}$ for a full-wave rectifier; $q_p = \frac{I_p}{I_p}$; β and μ_p are given by

$$\beta = \frac{1}{2q_p \mu_p m_p}; \quad \mu_p = \mu \frac{U_d}{U_{st}} \quad (25)$$

respectively. In practice the amplitude of the input voltage may
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vary considerably (up to ~ 2 times). Because of this, good stability of the output voltage U_{st} is required. If the input voltage varies from a value U_{in} to a value $k_{in} U_{in}$ and introduces a small change in the output voltage U_{st} such that $\varepsilon = \Delta U_{st} / U_{st}$ then $U_{st} = U_{in} \beta_0 \mu$ and $U_{st}(1 + \varepsilon) = U_{in} k_{in} \beta \mu$. From these relationships and assumptions

$$\frac{\Delta U_{st}}{U_{st}} \frac{k_{in} - 1}{S_d R_{id} m_p} \left\{ \frac{2 \left[\frac{B_p}{(-)} - 1 \right]}{k_{in} q_p \mu_p m_p} - \frac{K_{in} + 1}{2} q_p^2 B_p \right\} \quad (33)$$

is derived, which shows for given limits of changes in the amplitude of the input voltage that the instability in the output voltages of the system can be decreased by increasing the gain μ . If so the circuit will work satisfactorily with very small ratios of a.c. to d.c. components of current through the thermistor. Since in practice the inequality

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$$B_p = 1 + \frac{R_n}{R_m} + \frac{R_{ld}}{2R_m} > /v/ \quad (34)$$

is usually satisfied, it follows that U_{st} can be reduced to zero provided

$$q_p \approx \sqrt[3]{\frac{4}{k_{in}(k_{in} + 1)} \frac{1}{\mu_p m_p} \left[\frac{1}{(-v)} - \frac{1}{B_p} \right]} \quad (35)$$

is satisfied. Another factor introducing the destabilization of the arrangement are the changes in the ambient temperature T_{amb} .

These changes introduce changes in currents and voltages in the diode. The condition for thermal compensation is derived as

$$\alpha_k \approx 2 \frac{\alpha_T B_p (1 + q_p^2) + \alpha_d v \frac{R_{ld}}{R_T}}{2v + 2B_p + q_p^2 B_p (2 + v)} \approx \frac{\alpha_T \left(R_T + R + \frac{R_{ld}}{2} \right) + v \alpha_d R_{ld}}{(1 + v) R_T + R_n + \frac{R_{ld}}{2}} \quad (41)$$

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which gives an approximate value for the temperature coefficient α_k of resistance R_k . In this expression $\alpha_T = \frac{R_T}{T_{amb}} \cdot \frac{1}{R_T}$ - parameter of the thermistor (Ref. 7) [Abstractor's note: There are only 6 references at the end of the article]; $\alpha_d = \frac{I_p}{T_{amb}} \cdot \frac{1}{T_{amb}}$ - parameter of diode rectifier. In practice thermal compensation is achieved by the resistor R_k being made of an ohmic resistance of type БЛП (BLP) in parallel with a thermistor type KMT (KMT) or MMT (MMT). This arrangement enables the stabilization of the amplitude of output voltage within 1 % for $\pm 15 \div 20^\circ\text{C}$ ambient temperature variation. The short-time stability thus achieved is even better and without difficulties can be made of the order of 0.1 %. In the appendix an example of amplitudes stabilization of the arrangement as in Fig. 2 is determined. There are 3 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-Card 7/10

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language publications read as follows: F. Wilkins and Harkness,
PIEE, p. II, January 1956; J. Groszkowski, PIRE, no. 2, 1934.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i
elektrosvyazi im. A.S. Popova (Radio Engineering and
Electrical Communications Society im. A.S. Ponov)
[Abstractor's note: Name of association taken from
first page of journal]

SUBMITTED: March 7, 1960 (initially)
October 14, 1960 (after revision)

Card 1/10

BLOKHIN, A.S.; BORODZYUK, G.G.; LESHCHINSKIY, A.A.; OKSMAN, A.K.;
KOSMINSKIY, O.F.; MANUSHKIN, A.Ye.; MILEVSKIY, Yu.S.;
DRIATSKIY, N.M.; VASIL'YEV, V.V.; L'VOVICH, A.A.;
ORLEYEVSKIY, M.S.; MOROZ, I.A.; OKSIAN, A.K.; KNEI', G.S.;
SOROKIN, M.F.; BUTLITSKIY, I.M.; VASIL'YEV, L.N. [deceased];
GINTS, Yu.R.; VASIL'YEV, G.K.; LUGOVSKOY, N.Ye.; KIRILLOV,
Ye.V.; STRUYKINA, N.S.; LEVINOV, K.G.; BLOKHIN, A.S., otv.
red.; GURIN, A.V., red.; SLUTSKIN, A.A., tekhn. red.

[K-1920-frequency telephone system] Sistema vysokochastotnogo
telefonirovaniia K-1920; informatsionnyi sbornik. [By] A.S. Blokhin
i dr. Moskva, Sviaz'izdat, 1962. 319 p. (MIRA 16:4)
(Telephone)

L'vovich, A.I.

99-8-3/12

AUTHOR: Yermeyev, K. Ye., Agronomist (deceased) and L'vovich, A.I.,
Engineer

TITLE: Reserve Areas for Irrigation Fields (O rezervnykh territoriyakh
poley orosheniya)

PERIODICAL: "Gidrotekhnika i Melioratsiya", 1957, Nr 8, pp 12-17 (USSR)

ABSTRACT: Fields irrigated with waste water have to be equipped with
sanitary-technical and agricultural installations in such a
way, as to be capable to absorb the entire volume of the pro-
jected sewage without interruption throughout the year. Since
waste water is used for agricultural crops only during the vege-
tation period, reserve areas have to be provided. According
to directives issued by the Chief Government Inspector, dated
13 Nov, 1956, reserve filtering fields must exceed the irrigable
area by 25-30 %. In the event of impracticability of such
provisions, complete biological purification of sewage has to
be carried out by artificial means. Since the construction cost
per hectare of filtering area amounts to 40-50,000 Rubles,
general installation costs for sewage irrigation will be from
2-2.5 times higher than construction costs of these installations

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without filtering facilities. Subsequently, under these conditions construction of irrigation projects becomes economically untenable. If construction costs for filtering fields are prohibitive, then biological purification facilities, which take care of the total volume of sewage, must be provided. There is no need to prove the incompetence and superfluity of a request demanding a double cleaning of sewage: through biological purification and cleaning by filtering. Thus the mentioned sanitary - technical requirements cannot serve as a basis for determining the dimensions and the type of reserve facilities of irrigation fields. Calculations for reserve facilities must be based primarily on the purpose, whereas the dimensions and the type of installation depend on the volume of sewage processed, the used crop rotations and agricultural methods, as well as on soil and climatic conditions. Many years of practical experience have shown that no reserve areas are needed for small volumes of waste water, when irrigation is carried out without interruption throughout the year. Grass and forage crops are best suited to comply with sanitary requirements, because frequent and abundant irrigations are absorbed without detrimental effects. Analyses of the moisture balance showed that, even in years with high precipitation, waste water can be absorbed

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without the use of reserve fields. Such fields are necessary only when extreme conditions arise, such as caused by floods or break-downs. The article contains 1 figure, and 7 Slavic references.

AVAILABLE: Library of Congress

Card 3/3

L'VOVICH, A.I.

Sewage irrigation on collective and state farms; on a project for
time elements and production norms in planning. Gig. 1 san. 22
no.7:65-69 J1 '57. (MIRA 10:10)
(SEWAGE IRRIGATION)

L'VOVICH, A.I.; KANARDOV, I.P.; NOVIKOV, V.M.

Sewage irrigation fields and crop yields. Priroda 50 no.5:95-97
My '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i
melioratsii (Moskva).

(Sewage irrigation) (Vegetable crops—Irrigation)

L'VOVICH, A.I.

Problems of river and reservoir protection from sewage pollution.
Izv. AN SSSR. Ser. geog. no.3:35-44 My-Je '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki
i melioratsii im. A.N.Kostyakova.
(Water--Purification) (Sewage irrigation)

L'VCVICH, A. K.

20933 L'vovich, A. K. Puti razvitiya krupnogo rogatogo skota v kolkhazakh
UzSSR. Sots. sel. Khoz-vo Uzbekistana, 1949, No. 1, s. 82-87

SO: LETCPIS ZHURNAL STATMY - Vol. 28, Moskva, 1949

2263. L'Vovich. A.K.

Stoylovoye Soderzhaniye Krupnogo Rogatogo Skota. Lektsiya Dlya Trekhletnikh
Agrozootekhn. Kolkhoz Ku Rsov Bez Otryua Ot Proizvodstva. Pervyy God Obucheniya.
Zootekhminimum. Nukus, Karakalpakgiz., 1954. 16s. 19sm. (M-Vo Sel'skogo
Khozyaystva Uzbek. SSR. URP. S.-Kh. Propagandy. Lektsii Dlya Kolkhoznikov).
3.000 EKZ. 35k- Na Karakalpak. Yaz.-
(54-55472)

636.2.084.21(584.4)(02)

L'vovich, A.K.

USSR / Farm Animals. General Problems

U-1

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, No 72024

Author : Lapkin, K.I., L'vovich, A.K.

Title : The Problems of Animal Husbandry in the Golodnaya Steppe.

Orig Pub : Soc. S. Kh. Uzbekistana, 1956, No 11, 47-51

Abstract : No abstract.

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- 1 -

L'VCVICH, A. YE.

29699

K Raschyetu Pnyevmotransportnykh ustanovok Magnyetatyezh'noy sistemy s
ezhyektsionnoy voronkoy. (K stat'ye avtora "K Razvitiyu Tyeorii
Pnyevmaticheskogo transporta tyekstil'nogo volokna" v "Trudakh Lyeningr.
tyekstil. In-ta im. Kirova", No. 1, 1946). Trudy Lyeningr. Tyekstil. In-ta im
Kirova, No. 2, 1949, S. 95-105

So: Letopis' No. 40

Ливовиц, А. Я.

PHASE I BOOK EXPLOITATION SOV/4630

Leningrad. Universitet

Mekhanika (Mechanics) [Leningrad] 1960. 254 p. (Series: Its: Uchenyye zapiski, no. 280. Seriya matematicheskikh nauk, vyp. 35) Errata slip inserted. 1,725 copies printed.

Sponsoring Agency: Leningradskiy ordena Lenina gosudarstvennyy universitet imeni A. A. Zhdanova.

Resp. Ed.: N. N. Polyakhov, Professor; Ed.: T. I. Kulagina; Tech. Ed.: Ye. G. Zhukova.

PURPOSE: This collection of articles is intended for scientists, engineers at NII's (scientific research institutes) and design offices and also for students of advanced courses in related fields.

COVERAGE: The collection consists of original investigations in the field of modern mechanics including general mechanics, theory of elasticity, and hydroaerodynamics. No personalities are mentioned. References accompany all articles except one.

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Mechanics

SOV/4630

TABLE OF CONTENTS:

GENERAL MECHANICS

1. Babushkin, S.A. On the Dynamic Accuracy of Linear Combined Automatic Control Systems 3
2. Yershov, B.A., and A.Yu. L'vovich. Experimental Investigation of the Vibrations of the Sounding Boards of Planes 15
3. Kuznetsov, L.I. On the Equations of the Precession Theory of Gyroscopes 25
4. Mel'nikov, G.I. On Differential Equations of Triangular Form 31
5. Novoselov, V.S. Supplements to the Reports on Nonholonomic Mechanics 36
6. Novoselov, V.S. Equations of Motion of Nonlinear Nonholonomic Systems With Connections Not Belonging to the Type of N.G. Chetayev 53

~~Card 2/5~~

L'VOVICH, A. Yu.; SABANEYEV, V. S.

Selecting optimum parameters for the vibrator of a loop
oscillograph. Vest. LGU 18 no.1:106-114 '63.
(MIRA 16:1)

(Vibrators) (Oscillographs)

S/043/63/000/001/007/011
D218/D308

AUTHORS: L'vovich, A. Yu., and Sabaneyev, V. S.

TITLE: On the choice of the optimum parameters of the vibrator in a loop oscilloscope

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 1, 1963, 106-114

TEXT: It is noted that although it is commonly assumed that the vibrator may be described by a linear, second-order differential equation, a study of the amplitude-frequency characteristics of various types of vibrators (particularly high-frequency vibrators) showed that this assumption is not in agreement with experimental data. It is now shown that the motion of the mirror of a loop oscilloscope vibrator should be described (on the linear approximation) by a third-order differential equation which is of the form

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$$\frac{d^3\varphi}{dt^3} + \left(\frac{r}{I} + \frac{R}{L} \right) \frac{d^2\varphi}{dt^2} + \frac{cL + Rr + K^2}{LI} \frac{d\varphi}{dt} + \frac{Rc}{LI} \varphi = \frac{K}{LI} u, \quad (3)$$

where φ is the deflection of the mirror, t is the time, r is the mechanical resistance coefficient, R is the electrical resistance of the vibrator circuit, I is the moment of inertia of the mirror, L is the inductance of the circuit, B is the magnetic induction, l is the length and a the width of the loop formed by the conducting wire, and $K = Bla$. The equation is rewritten in the form

$$x''' + b_1 x'' + b_2 x' + x = P \sin \omega \tau, \quad (5)$$

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and a solution is sought in the form of a simple harmonic function of time. The solution is then used to determine the part of the characteristic which is reasonably flat and the corresponding ranges of vibrator parameters are determined.

SUBMITTED: April 24, 1962

Card 3/3

L'VOVICH, Aleksandr Yur'yevich; POLYAKHOV, N.N., etv. red.;
MATVEYEVA, V.V., red.

[Statics; methodological instructions no.1 in the course
of theoretical mechanics for second-year students] Statika;
metodicheskie ukazaniia no.1 po kursu teoreticheskoi me-
khaniki dlia studentov II kursa. Leningrad, 1964. 20 p.
(MIRA 17:7)

1. Leningrad. Universitet. Otdel zaochnogo obucheniia. Ma-
tematiko-mekhanicheskii fakul'tet.

BUKHARINOV, G.N., dots.; L'VOVICH, A.Yu.; SABANEYEV, V.S.; TIKHONOV,
A.A.; TOVSTIK, P.Ye.; TSAR'KOVA, Z.I., red.

[Laboratory manual on the theory of oscillations] Laborator-
nyi praktikum po teorii kolebaniy. Leningrad, Izd-vo Leningr.
univ., 1965. 75 p. (MIRA 18:4)

1. Leningrad. Universitet. Matematiko-mekhanicheskiy fakul'tet.

I, 1901-66 INT(1)/EWA(h) GW

ACCESSION NR: AP5019933

UR/0043/65/000/003/0113/0119

AUTHOR: L'vovich, A. Yu.

TITLE: On the theory of electromechanical correction of vibrometers

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 3, 1965, 113-119 44,55

TOPIC TAGS: vibration measurement, differential equation, accelerometer

ABSTRACT: The Lagrange-Maxwell method is used to introduce greater precision in the equations representing the action of vibration measuring devices of the seismic type by taking into account the relation between the electrical and mechanical parameters. An induction vibrometer is discussed, then an electrostatic vibrometer, and finally an electromechanical vibrometer with correction which has the properties of an accelerometer. "The author thanks B. A. Yershov and V. E. Pasyukov for their valuable suggestions and advice." Orig. art. has: 35 formulas, 3 figures.

ASSOCIATION: none

SUBMITTED: 15May64

NO REF SOV: 003

ENCL: 00

OTHER: 000

44,55

SUB CODE: EE, ME

Card 1/1

L 22243-66 EWT(m)/T

ACCESSION NR: AP6005421

SOURCE CODE: UR/0289/65/000/003/0057/0063

AUTHOR: Vol'khin, V. V.; Ponomarev, Ye. I.; L'vovich, B. I.; Kolesova, S. A.

ORG: Perm Polytechnic Institute (Permskiy politekhnicheskiy institut)

20
B

TITLE: The use of freezing for the coagulation of weak colloidal solutions and the granulation of inorganic sorbents

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 3, 1965, 57-63

TOPIC TAGS: inorganic chemistry, sorption, absorption coefficient, solution property, freezing, chemical precipitation

ABSTRACT: The authors investigated the possibility of the use of freezing during the precipitation of elements without a collector from weak solutions, as well as the effect of freezing on the density, filtering capacity, and the sorption properties of coagulants of inorganic substances. Some results of earlier work are presented together with new experimental data in order to provide an overall concept as to the possibilities of the freezing method. The procedure is described in detail. It is shown that by means of freezing and thawing it is possible to

UDC: 541.18.047

2

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ACCESSION NR: AP6005421

separate metal ions as hydroxides from solutions with concentrations of precipitant up to 10^{-5} g-ion/liter, and to reduce their content in the solution to a considerable degree at concentrations up to 10^{-6} g-ion/liter. The freezing of the solutions also promotes a more complete separation of chemical compounds with appreciable solubility. The dehydration and the densification of inorganic precipitants by freezing does not lead to the desorption of radioactive isotopes previously absorbed by the inorganic precipitants from the solution. The sorption isotherms (for the initial coagulants) of frozen and thawed precipitants are identical and indicate that the values of the maximum sorption capacity of a substance are equal before and after freezing. The freezing and subsequent thawing make it possible to obtain coagulants of inorganic substances in granular form without substantially reducing their dynamic sorption capacity. The precipitates produced may be recommended for use as sorbents in column chromatography. Orig. art. has: 2 figures and 4 tables.

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 019 / OTH REF: 009

Card 2/2 nst

L'VOVICH, D. B.

PA 28/49T88

USSR/Medicine - Plants; Poisonous
Medicine - Grass

Aug 48

"The Poisonous Nature of Lolium Temulentum," D. B.
L'vovich, Vologda Inst of Epidemiol and Microbiol,
3/4 p

"Gig i San" No 8

Observation and tests of polluted linseeds disclosed
21-25.5% of Lolium Temulentum.

28/49T88

L'vovich, D. B.

OREKHIN, N.M.; L'VOVICH, D.B.

~~XXXXXXXXXXXXXXXXXXXX~~
Cranberry as a medium for speedy detachment of nits from the hair.
Gig.sanit., Moskva No.5:50 May 50. (CML 19:4)

L'VOVICH, D.B. (Kursk)

Case of poisoning at a sugar works. Gig. i san. 23 no.8:75-76
Ag '58 (MIRA 11:9)

(CARBON MONOXIDE--TOXICOLOGY)

L'VOVICH, D.B. (Kursk)

Carbon dioxide hazards at grain collecting points. Gig.
truda i prof. zab. 4 no.1:46-47 Ja '60. (MIRA 15:3)
(CARBON DIOXIDE)
(GRANARIES--HYGIENIC ASPECTS)

L'VOVICH, D.B.

Sanitary protection for the water supply on livestock farms. Gig.
i san. 26 no.6:105 Je '61. (MIRA 15:5)

1. Iz Kurskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(STOCK AND STOCKBREEDING--HYGIENIC ASPECTS)
(WATER SUPPLY, RURAL)

L'VOVICH, G.A.

Recurrent perforations in gastrointestinal tuberculosis treated
with streptomycin. Probl. tuberk., Moskva no. 6:63-65 Nov-Dec 1952.
(GLML 23:5)

1. Docent. 2. Of the Department of Phthisiotherapy (Head -- Prof.
N. S. Morozovskiy) of Kiev Institute for the Advanced Training of
Physicians (Director -- Prof. I. I. Kal'chenko) and of the Ukrainian
Scientific-Research Tuberculosis Institute (Director -- A. S. Mamolat).

MIKHNEVICH, P.A., inzh.; L'VOVICH, GOG., inzh.

Mechanization of peat reloading. Torf prom. 39 no.6:3-4 '62.
(MIRA 16:7)

1. Belgiprotorf.

(Peat machinery)

GITIS, S.S.; L'VOVICH, I.G.

Reactions of aromatic nitro compounds. Part 18: Mechanism of
cleavage of a nitro group in symmetrical trinitrobenzene.
Zhur. ob. khim. 34 no.7:2250-2254 J1 '64 (MIRA 17:8)

TSEYTLIN, Ya.M.; L'VOVICH, I.V.

New pickups for the automation of dimension control. Izv.tekh.
no.11:16-17 N '62. (MIRA 15:11)
(Automatic control)

TSEYTLIN, Yakov Mikhaylovich; L'VOVICH, Izrail' Vol'fovich;
YUSOV, Oleg Ivanovich; AMOSOV, I.S., red.

[Photoelectric transducers for the automation of inspection operations] Fotoelektricheskie datchiki dlia avtomatizatsii kontrolya. Leningrad, 1963. 26 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriya: Metody i sredstva kontrolya, ispytaniia materialov, detalei i mekhanizmov, no.4) (MIRA 17:5)

Tseytlin, Ya.M.; I. VOVICH, I.V.; YUSOV, O.I.

Photoelectric transducers with a spring mechanism. Izv. tekhn.
no.1:15-17 Ja '64. (MIRA 17:11)

L'VOVICH, M. I.

"Elements of the Water Cycle of the Earth's Rivers, Trudy NIU GUGMS,
Series 4, No 18, 1945.

L'VOVICH, M.I.

36359 Printsipy razmeshcheniya zashchitnykh lesnykh polos na polyakh kolkhov
1 sovkhov. Les 1 step', 1949, No. 7, S. 10-24

SO: Letopis' Zhurnal' nykh Statey, No. 49, 1949

L'VOVICH, M. I.

178T72

USSR/Hydrology - Ground Waters
Rivers

1 Nov 50

"Procedure for Calculating the Variations in the Feeding of Rivers of Underground Waters," M. I. L'vovich, State Hydrol Inst

"Dok Ak Nauk SSSR" Vol LXXV, No 1, pp 21-24

Dependence of evapn E and underground supply U (both in units of mm) upon gross moisture W (in mm's). Various portions of the curves describing the general E, U vs W relations are correlated to actual conditions such as in steppe and forest-steppe regions of European USSR. Submitted 10 Aug 50 by Acad A. A. Grigor'yev.

178T72

L'VOVICH, M. I.

178T73

USSR/Hydrology - Rivers

11 Nov 50

"Procedure for Calculating the Expected Variations in the State of Rivers Under the Influence of Reforestation," M. I. L'vovich, State Hydrol Inst

"Dok Ak Nauk SSSR" Vol LXXV, No 2, pp 193-195

Considers formula for the expected (after reforestation) surface runoff (S' in mm of layer) in terms of: area F of the rivers watershed in sq km; area F_n not under cultivation; area f_r of reforestation, under the Stalin plan, within the given watershed; present surface runoff S before reforestation; expected surface runoff S_r from fld sodded and under crop rotation; etc. Submitted 10 Aug 50 by Acad A. A. Grigor'yev.

178T73

L'VOVICH, M. I.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 624 - I

BOOK

Call No.: AF 501068

Authors: Doctors of Physico-Mathematical Sciences BUDYKO, M. I. and Prof. YUDIN, M. I., Doctors of Geographical Sciences, Profs. DROZDOV, O. A., L'VOVICH, M. I., POGOSYAN, Kh. P., and SAPOZHNIKOVA, S. A.

Full Title: CLIMATIC CHANGES IN CONNECTION WITH THE PROJECT FOR THE TRANSFORMATION OF NATURE IN THE ARID REGIONS OF THE USSR

Transliterated Title: Izmeneniye klimata v svyazi s planom preobrazovaniya prirody zasushlivykh rayonov SSSR

PUBLISHING DATA

Originating Agency: None

Publishing House: Hydrometeorological Publishing House

Date: 1952

No. pp.: 206

No. of copies: 3,000

Editorial Staff

Editor: Prof. Dr., Kh. P. Pogosyan

PURPOSE: Presentation in concise systematic form of the results of fundamental studies of climate amelioration by hydrometeorological institutes and the recommendations to be followed by those interested in climate transformation.

TEXT DATA

Coverage: The monograph is divided into seven chapters and a concluding chapter, the chapters being subdivided into several sections.

L'VOVICH, M. I.

USSR/Geophysics - Forest Belts

May/Jun 52

"Concerning a Procedure for Planning Forest Belts on the Fields of Kolkhozes and Sovkhozes," M.I. L'vovich, Complex Sci Expedition on the Problem of Field-Protecting Forestry Development, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geograf" No 3, pp 3-17

Discusses the problems of establishing the prevailing direction of winds and delineating the harmful (hot, dry) winds. Describes schemes of forest belts to decrease evapn. Determines the values for the widths of water-regulating forest belts for various regions.

216T82

USSR/Geophysics - Irrigation Sep/Oct 52
Agriculture - Soil Improvement

"Transformation of River Flow in the Steppes
and Forest-Steppe Regions of European USSR,"
M. I. L'vovich, Combined Sci Expedition on
Problems of Field-Protecting Afforestation,
Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geograf" No 5, pp 3-15

According to a 1948 decision of Council of
Ministers USSR, forest belts are proposed to

226r64

retain water on special flow areas. Approx.
computation shows that a change of flow will
occur rapidly, increasing through the coming
years and reaching its full capacity around
1985.

226r64

L'VOVICH, M. I.

L'VOVICH, M.I.

BUDYKO, M.I.; DROZDOV, O.A.; L'VOVICH, M.I.; POGOSYAN, Kh.P.; SAPOZHNIKOVA, S.A.;
YUDIN, M.I.

Regularities of climatic changes with respect to the realization of the
Stalin plan of transformation of nature. Vop.geog. 28:66-73 '52.
(MLRA 7:5)

1. Gidrometsluzhba. (Meteorology, Agricultural) (Windbreaks, shelter-
belts, etc.)

L'VOVICH, M.I., doktor geograficheskikh nauk, otvetstvennyy redaktor.

[Hydrographic studies of rivers of the U.S.S.R.] Ocherki po gidro-
grafii rek SSSR [Otvetsstvennyi redaktor M.I.L'vovich] Moskva, Izd-vo
Akademii nauk SSSR, 1953. 322 p. (MLRA 7:5)

1. Akademiya nauk SSSR, Institut geografii.
(Rivers) (Hydrography)

L'VOVICH, M.I.

Control of the water balance of irrigated fields with the aid of forest plantations as a means of decreasing rates of irrigation.
Izv.AN SSSR. Ser.geog. no.2:29-44 Mr-Apr '54. (MLRA 7:5)

1. Institut lesa Akademii nauk SSSR.
(Irrigation) (Forest influences)

L'VOVICH, M.I.

USSR/ Agriculture - Moisture conservation

Card 1/1 Pub. 45 - 3/15

Authors : L'vovich, M. I.

Title : Effect of soil cultivation on drainage

Periodical : Izv. AN SSSR. Ser. geog. 5. 40 - 48, Sep - Oct 1954

Abstract : The problem of retaining moisture in the soil is discussed from the viewpoint of its effect on agriculture and floods. Experimentation and study were carried on more intensely in the region immediately east of the Volga river where such methods as plowing under stubble, trapping winter snow, contour plowing, and retaining water in special ditches were used. A description is given of these ditches which are lined with waterproof material allowing only the overflow to enter the drainage channel and flow on to the rivers. Four Soviet references (1939 - 1953). Drawing; graphs; tables.

Institution: Acad. of Sc., USSR, Geographic Institute

Submitted: